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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/674,415

10/01/2003

Bartley Mark Hirst

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12/20/2005

HEWLETT PACKARD COMPANY  
P O BOX 272400, 3404 E. HARMONY ROAD  
INTELLECTUAL PROPERTY ADMINISTRATION  
FORT COLLINS, CO 80527-2400

EXAMINER

GLEITZ, RYAN M

ART UNIT

PAPER NUMBER

2852

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/674,415	<b>Applicant(s)</b> HIRST ET AL.	
	<b>Examiner</b> Ryan Gleitz	<b>Art Unit</b> 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 15 September 2005 has been entered.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 9-19, 23-26, and 29-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuji (US 4,977,431).

Fuji discloses a fusing system including a fuser roller (10); a pressure roller (20) arranged parallel to the fuser roller (10) for providing pressure to a medium passing between the fuser roller and the pressure roller; a heater (30, 31) external to the fuser roller (10) and applying heat to the fuser roller when the heater is operated to apply heat; and a control mechanism (40) that controls the heater (30, 31).

When the temperature of the heater (30, 31) reaches 205 degrees C, which is about 250 degrees C, the heater is turned off (col. 5, lines 24-41), which reads on reducing heat provided by the heater when the temperature of the heater is determined to be above a predetermined maximum heater temperature..

Regarding the limitation, “reduce heat . . . above a predetermined temperature” in claim 1, and the entireties of claims 2, 3, 6, and 9, these method limitations attempt to limit an apparatus claim. While it is permissible to recite functional limitations in an apparatus claim, the apparatus must distinguish from the prior art in terms of structure rather than function. See MPEP 2114. Therefore, the prior art will read on the claim if all of the structural limitations are met in such a way that the prior art structure would be capable of performing the claimed function. In the present case, the control mechanism (40) of Fuji is capable of performing all of the recited temperature control functional limitations.

Regarding claims 4 and 5, a heater temperature sensor (42) is a thermistor (col. 7, line 22) detects the temperature of the heater.

Regarding claim 9, the predetermined temperature of the fuser roller is 185 C, col. 4, line 52, which is about 180 C.

Regarding claims 10 and 11, a fuser roller temperature sensor (14) detects the temperature of the fuser roller (10).

Regarding claims 1 and 12-14, a second embodiment in figure 5 includes a pressure roller temperature sensor (42) that detects a temperature of the pressure roller (20) that includes a heater (31). In this embodiment the heater (31) is in the pressure roller instead of an external roller. Based on the treatment of functional limitations discussed above, the control mechanism will be capable of reduce the heat when the pressure roller (20) is above a temperature.

Regarding claim 15, the heater (30, 31) is a roller.

Regarding claim 16, the control part may be a microcomputer, col. 7, line 20, which reads on a processor programmed to provide control functions.

Regarding claims 17 and 18, figure 3 shows a the circuit of the control mechanism (40), including a switch (47) controlling power to a heater lamp of the heater; and a comparison circuit (43) which is configured to receive an input signal indicative of the temperature of the heater and to provide an output causing the switch (47) to prevent power to the heater lamp when the input signal indicative of the temperature of the heater (31) indicates that the temperature of the heater is above a predetermined maximum heater temperature.

Regarding 19, the control mechanism having the comparison circuit is also configured to receive an input signal, as shown in figure 1, indicative of the temperature of the fuser roller (10) and to provide an output causing the switch to prevent power to the heater lamp when the input signal indicative of the temperature of the fuser roller (10) indicates that the temperature of the fuser roller (10) is above a predetermined operating temperature. See col. 5, lines 24-41.

Regarding claims 23-26 and 29-33, as evident from figure 3 all of the temperature control in Fiji is done by decreasing the voltage and power applied to the heater. Additionally, Fuji expressly teaches all of the further method limitations, and these limitations are discussed above with their corresponding apparatus claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 2852

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7, 20, 21, 27, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji (US 4,977,431) in view of Anthony et al. (US 2003/0021611).

Fuji discloses the fixing apparatus and method above, but do not disclose a rotation sensor.

However, Anthony et al. disclose a motion sensors to ensure that a fuser stops rotating (paragraph [0004]), which reads on a rotation sensor that detects the rotation of the fuser roller. If the fuser roller does stop rotating, the fuser is shut down, which reads on preventing power to the heater lamp then the fuser roller is not rotating.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixing apparatus of Fuji with the motion sensors taught by Anthony et al. to avoid overheating. See paragraph [0004].

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuji (US 4,977,431) in view of Yamamoto et al. (JP 04-204858).

Fuji discloses the fixing apparatus above including triac (44), but does not disclose a photo diac coupled with the triac.

However, Yamamoto et al. disclose a photo-triac (14) for turning on and off a triac (13). See abstract, lines 12-13. While the Abstract of Yamamoto et al. reads "photo-TRIAC" the circuit element shown by reference numeral 14 in figure 1 appears to be the same circuit element shown by Applicant in figure 3. Additionally, a triac is merely special type of diac. A triac is a diac that can be variably controlled. The term diac is broader than the term triac, and therefore a photo-triac would read on the photo-diac as claimed.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the fixing apparatus of Fuji with the photo-triac coupled with a triac taught by Yamamoto et al. to prevent the adverse affect of noise and voltage fluctuations when a heater is turned on. See abstract, lines 1-4.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 23-33 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ryan Gleitz whose telephone number is (571) 272-2134. The examiner can normally be reached on Monday-Friday between 9:00AM and 6:00PM.

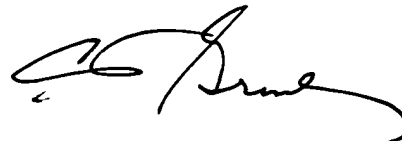
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (571) 272-2136. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2852

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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Arthur T. Grimley  
Supervisory Patent Examiner  
Technology Center 2800